



MONITOR SOFTWARE OSD IC

GENERAL DESCRIPTION

The W82C610 and *SoftControl* software provide a proprietary Software On-Screen-Display (OSD) solution for monitors. It delivers excellent performance and flexibility over hardware OSD solution in current monitor industry. User can adjust monitor from *SoftControl* under Window (R) environment instead of adjustment from front panel. The W82C610 decodes the RGB video signals generated by a *SoftControl* program from the host, over normal VGA cable, and produces control data that can be accessed by the display microcontroller.

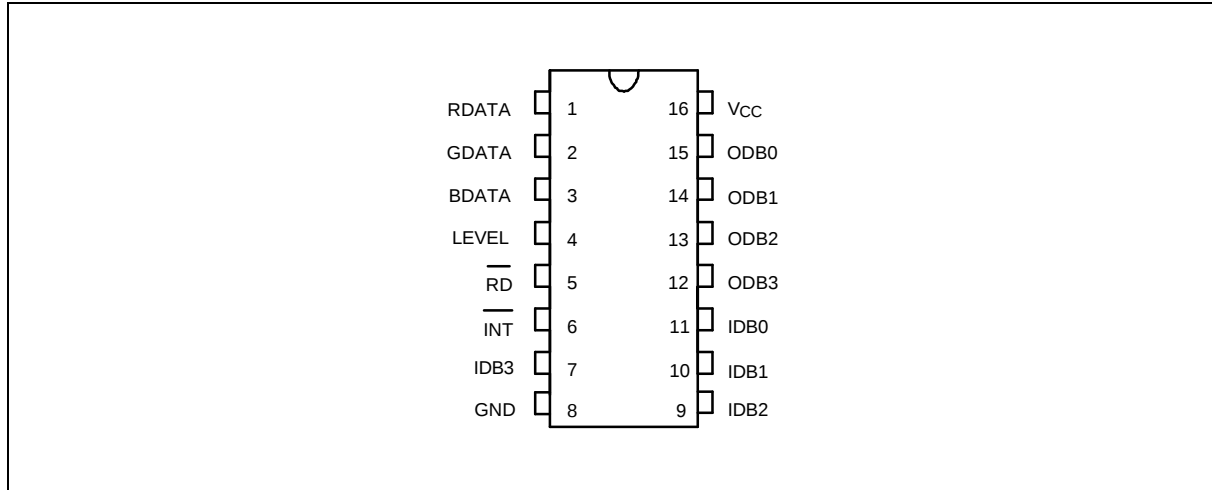
FEATURES

- A delicate solution for software On-Screen-Display
- Excellent performance and flexibility over Hardware OSD
- Low cost implementation for existing monitors
- 16-pin PDIP
- 5V CMOS device
- ESD protection (> 4 KV)

***SoftControl* Feature List**

- Five languages selectable for icon label
- Fully adjustable
 - Brightness, Contrast, Parallelogram, Pincusion
 - Position, Size, Symmetry, Trapezoid, Color
 - Factory Preset
- Current system status
 - Input connect type
 - H/V frequency, Interlace/Non-interlace
 - Operating resolution
 - Degauss
- Visual Inspection
 - Aspect Ratio, Color Purity, Dynamic Converge
 - High Voltage, Static Converge, White Balance
 - Screen Resolution, Text Resolution

PIN CONFIGURATION



PIN DESCRIPTION

NO.	NAME	TYPE	DESCRIPTION
1	RDATA	Input	AC-coupled red video (0.7 V _{PP} typ)
2	GDATA	Input	AC-coupled green video (0.7 V _{PP} typ)
3	BDATA	Input	AC-coupled blue video (0.7 V _{PP} typ)
4	LEVEL	Input	Comparator trip level for RGB video
5	$\overline{RD}$	Input	Read enable. Enables the ODB[3:0] bus of the <i>SoftControl</i> code output to be read by the controller.
6	$\overline{INT}$	Output (OD)	Enabled whenever <i>SoftControl</i> identification code is detected.
7	IDB3	Input	4-bit bus for data input from key pad
8	GND	Power	Ground
9	IDB2	Input	4-bit bus for data input from key pad
10	IDB1	Input	4-bit bus for data input from key pad
11	IDB0	Input	4-bit bus for data input from key pad
12	ODB3	Output	4-bit bus for data output
13	ODB2	Output	4-bit bus for data output
14	ODB1	Output	4-bit bus for data output
15	ODB0	Output	4-bit bus for data output
16	Vcc	Power	+5V

*OD: Open-drain output

The diagram illustrates the internal architecture of the 8255 PPI. It features a central block containing several key components:

- COMPARATORS:** Receives external inputs RDATA, GDATA, BDATA, and LEVEL. It outputs signals to the SHIFTS and DETECT registers.
- SHIFTS:** A 16-bit shift register that receives data from the comparators and the LATCH. It outputs data to the LATCH and the READ CONTROL.
- DETECT:** A 16-bit register that receives signals from the comparators and the SHIFTS. It outputs a LATCH signal to the LATCH.
- LATCH:** A 16-bit latch that receives data from the SHIFTS and the DETECT. It outputs data to the IDB[3:0] and ODB[3:0] ports.
- READ CONTROL:** Receives the RD (Read Data) signal and the LATCH signal. It outputs an INT (Interrupt) signal.
- ENABLE:** A control signal that is active when the RD signal is low.
- CLEAR:** A control signal that is active when the RD signal is low.

 The diagram shows the flow of data and control signals between these internal components and the external ports (IDB[3:0], ODB[3:0], RD, INT).

The W82C610 provides a data path for inputs from key pad to microcontroller. Output ODB0-ODB3 can be either from key pad (IDB0-IDB3) or from VGA cable (RDATA, GDATA, BDATA).

ABSOLUTE MAXIMUM RATINGS

PARAMETER	RATING	UNIT
Supply Voltage (Vcc to Vss)	5.5	V
Analog Input Voltage	Vss-0.5 to Vcc+0.5	V
Digital Input Voltage	Vss-0.5 to Vcc+0.5	V
Power Dissipation	5	mW
Ambient Operating Temperature	0 to 70	°C
Lead Temperature (Soldering, 10 sec)	250	°C

Note: Exposure to conditions beyond those listed under Absolute Maximum Ratings may adversely affect the life and reliability of the device.

DC CHARACTERISTICS

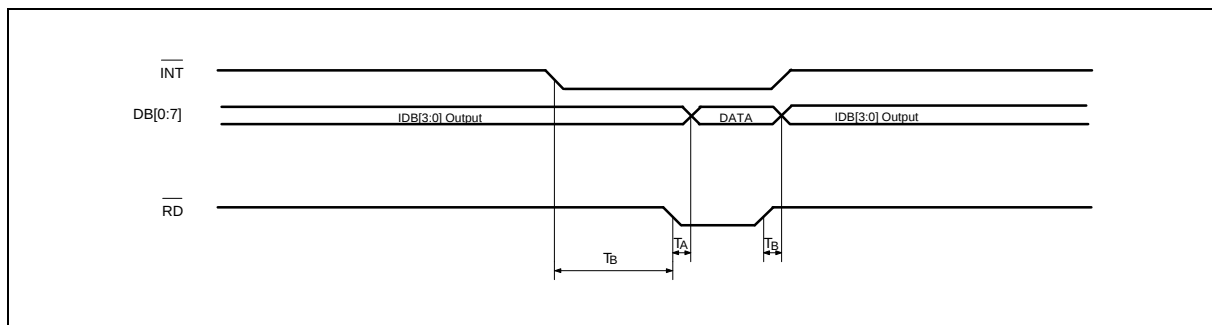
Vcc = 5V +/- 5%, Ta = 0° C to 70° C

PARAMETER	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Vcc Supply Current				1	mA
Leakage Current	Ta = 70° C	-	-	10	μA
Logic Input, VIH		0.7 VDD	-	-	V
Logic Input, VIL		0	-	0.2 VDD	V
Logic Output, VOH	Io ≥ 24 mA	2.5	3.5	-	V
Logic Output, VOL	Io ≤ 6 mA	-	0.3	0.4	V
Operating Frequency		-	-	Note	MHz

Note: Depending on level input voltage (Level Voltage (V)/Max Frequency (Mhz)):
(3/2, 2.5/10, 2/13, 1.5/15, 1/15, 0.5/10).

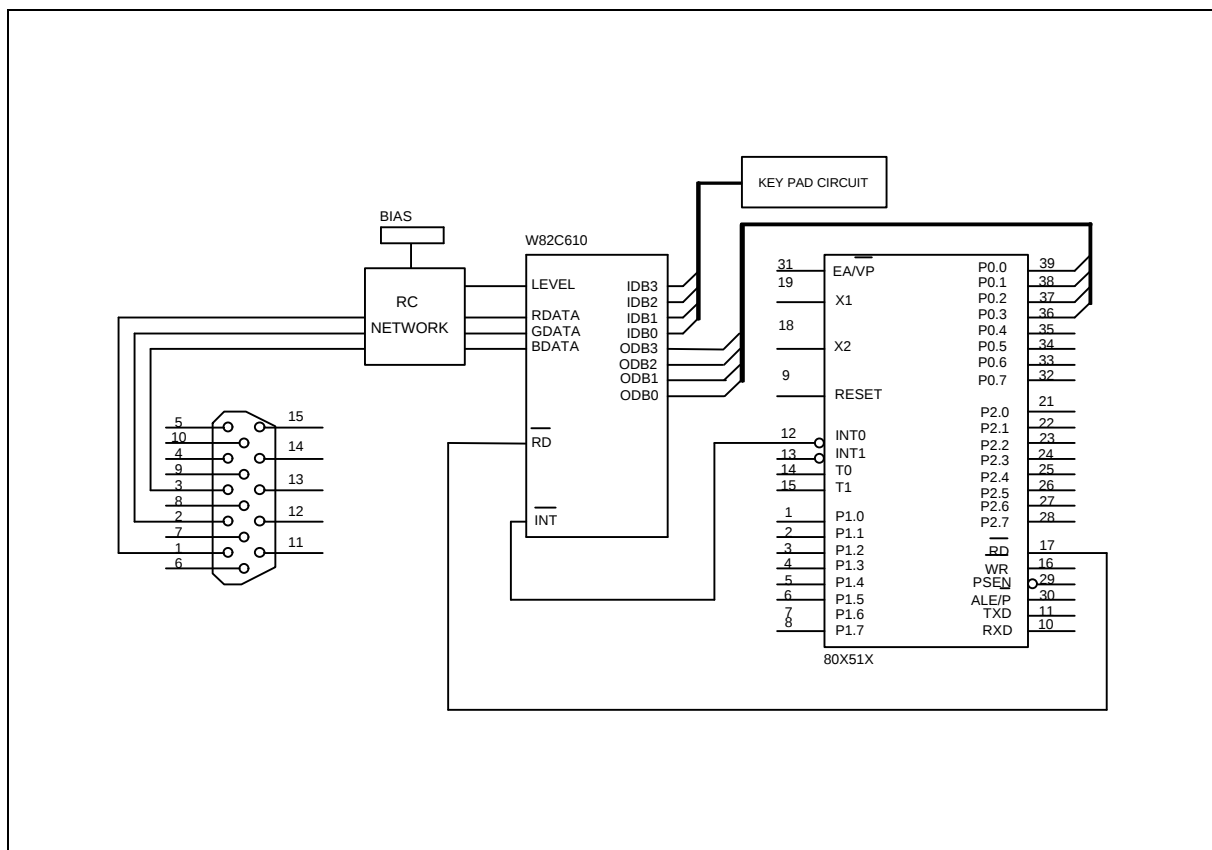
AC CHARACTERISTICS AND TIMING WAVEFORMS

Read SoftControl Data



PARAMETER	SYMBOL	MIN.	MAX.	UNIT
$\overline{\text{INT}}$ to Read	T _H	-	Note	Note
Data Ready	T _A	50	-	nS
Bus to IDB[3:0] Output	T _B	-	50	nS

TYPICAL APPLICATION CIRCUIT



The diagram illustrates the internal structure of the W82C610 chip, showing its connection to a +5V supply and ground. The chip is connected to a +5V supply and ground. It features three input lines: RED, BLUE, and GREEN, each with a 150K pull-up resistor and a 33uF capacitor. The chip also has a LEVEL input, an RDATA output, a BDATA output, and a GDATA output. The internal circuitry includes several IN4148 diodes and 0.1uF capacitors.



11F, No. 115, Sec. 3, Min-Sheng East Rd.,
Taipei, Taiwan
TEL: 886-2-7190505
FAX: 886-2-7197502

TEL: 1-408-9436666
FAX: 1-408-9436668

- 6 -